Competences:

an education and training competence framework for peripheral venous cannulation in children and young people
Acknowledgements

Contributors
This document was revised in 2016, by the review team:

Jude Taylor, Advanced Nurse Practitioner, Oxford Children's Hospital
Neil Fletcher, Clinical site manager Barts NHS Trust
Jenny Edmonds, Advanced Nurse Practitioner/ENP, Ipswich Emergency department.
Melanie Chipendale, Advanced Nurse Practitioner/children's clinic manager, Worcestershire Acute Hospital NHS Trust
Jackie Campbell, Advanced Nurse Practitioner, Oxford Children's Hospital

The Royal College of Nursing would like to thank the following members for support in publishing the revised 2013 edition of this document:

Jessica Higson, Sister and Advanced Nurse Practitioner for Children, Royal Berkshire Hospital, Reading
Tony Knox, Practice Educator (paediatrics) Royal Berkshire Hospital, Reading
Jude Taylor, Advanced Children's Nurse Practitioner, Oxford Children's Hospital
Dawn Williams, Advanced Children's Nurse Practitioner, Alderhey Hospital, Liverpool
Jeanette Pearce, Resuscitation Officer – Paediatric Lead and Sister, Paediatrics and Emergency Department, Gloucestershire Hospitals NHS Foundation Trust
Neil Fletcher, Senior Nurse, Paediatrics, Imperial Hospital, London.

We would also like to thank the NHS Modernisation Agency for sponsoring the development of the original framework, first published in 2005. We are grateful to the following people for their assistance in the production of the original framework document.

Expert Group
Karen Bravery, Nurse Practitioner/Practice Development Lead Intravenous Therapy for Infection, Cancer and Immunity, Great Ormond Street Hospital for Children NHS Trust
Pauline Brown, Lead Nurse IV Therapy, Royal Liverpool Children's Hospital NHS Trust
Julie Flaherty, Children's Nurse Consultant, Unscheduled Care, Salford Royal Foundation Trust
Liz Gormley-Fleming, Senior Lecturer, Children's Nursing, University of Hertfordshire
Alison Hegarty, Teacher Practitioner, IV Therapy, Central Manchester and Manchester Children's Hospital NHS Trust
Valerie McGurk, Practice Development Facilitator, Paediatrics, Northampton General Hospital Trust
Louise Mills, Nurse Practitioner for Intravenous Therapy, Great Ormond Street Hospital for Children NHS Trust
Sally Ramsay, Independent Nursing Adviser, Ramsay Consulting
Jo Rothwell, Lead Nurse, IV Therapy, Central Manchester and Manchester Children's Hospital NHS Trust

Review group
Anne Casey, Editor and Adviser, Royal College of Nursing
Jennie Craske, Pain and Sedation Clinical Nurse Specialist, Royal Liverpool Children's Hospital NHS Trust
Annette K Dearmun, Lecturer Practitioner, Oxford Radcliffe Hospitals NHS Trust
Ansley McGibbon, Senior Nurse, Practice, Research, Development and Education Unit, Lothian University Hospitals, Edinburgh
Steve McKenna, Charge Nurse, Paediatric Ambulatory Care/Outpatients, Royal Free Hampstead NHS Trust
Fiona Smith, Adviser in Children and Young People's Nursing, Royal College of Nursing

We are also grateful to the Royal College of Paediatrics and Child Health for its support

This publication is due for review in August 2018. To provide feedback on its contents or on your experience of using the publication, please email publications.feedback@ rcn.org.uk

RCN Legal Disclaimer
This publication contains information, advice and guidance to help members of the RCN. It is intended for use within the UK but readers are advised that practices may vary in each country and outside the UK.

The information in this booklet has been compiled from professional sources, but it’s accuracy is not guaranteed. While every effort has been made to ensure that the RCN provides accurate and expert information and guidance, it is impossible to predict all the circumstances in which it may be used. Accordingly, the RCN shall not be liable to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by what is contained in or left out of this information and guidance.

Published by the Royal College of Nursing, 20 Cavendish Square, London, W1G 0RN
© 2016 Royal College of Nursing. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without prior permission of the Publishers. This publication may not be lent, resold, hired out or otherwise disposed of by ways of trade in any form of binding or cover other than that in which it is published, without the prior consent of the Publishers.
Contents

Introduction 4

1. Guidance for programme development 5
   Education pathways 5
   Teaching and learning strategies 5
   Assessment 5

2. Competences and learning outcomes 7
   Domain 1: professional and legal issues 7
   Domain 2: preparing self, child and family 7
   Domain 3: inserting the cannula 8
   Domain 4: cannula care and removal 8
   Domain 5: risks and hazards 9

3. References and further reading 10

4. Online resources 15
Introduction

Competence can be defined as: “The state of having the knowledge, judgement, skills, energy, experience and motivation required to respond adequately to the demands of one’s professional responsibilities” (Roach, 1992).

This education and training competence framework for peripheral venous cannulation in children and young people was first published in 2005. It has been revised in 2013 and again in 2016 and addresses a number of political and professional issues and initiatives.

In order to facilitate holistic and timely treatment for patients, nurses increasingly need to develop competence in inserting peripheral intravenous cannulae. For registered nurses working with children and young people this is usually regarded as an expanded role. Before starting a programme of education and training, in most cases practitioners will need to demonstrate competence and experience in administering medicines intravenously to children and young people.

This framework identifies the theoretical and practical competences, and the overall indicative content necessary for education and training programmes to meet the needs of children and young people.

It aims to support consistent curriculum and practice development so that practitioners can develop and maintain the ability to carry out this task, regardless of where they work.

It should also be used to develop new programmes, and to review and revise existing ones. By using this framework, other professionals and employers can be confident in the standard and proficiency of practitioners.

Developing competence within age bands

There are considerable differences between children of varying ages, and we recommend that practitioners develop competence within specific age bands according to their area of practice:

- 0 to 1 year
- 1 to 5 years
- 5 years and above.

When either planning new courses or reviewing existing courses, we recommend that hospitals and universities use this as their competence framework.
1. Guidance for programme development

Education pathways

This framework can be used to develop training programmes for registered nurses working with children and young people. Alternatively, it can be used to review existing programmes to ensure that they meet the needs of children and young people. Training may be linked to other competences such as those required for capillary blood sampling and venepuncture.

Indicative training content should encompass:

- the Nursing and Midwifery Council Code (2015)
- legal, professional and local policies regarding enhanced nursing roles
- accountability when performing peripheral venous cannulation
- local policies and procedures for peripheral venous cannulation in children and young people
- the evidence base for good practice in peripheral venous cannulation
- policies and good practice guidance in obtaining informed consent
- policies and good practice guidance for holding and restraining children
- the anatomy and physiology of veins, arteries and nerves
- distraction techniques
- safe practice in the handling and disposing of sharps
- the role of the NHS Improvement and the Medicines and Healthcare Products Regulatory Agency related agencies, and equivalent organisations, in Scotland and Northern Ireland.
- NPSA guidance in Right patient – right care (2004a)
- Health and Safety at Work Act 1974 and other regulations (HSE)
- phlebitis, thrombophlebitis, infiltration, extravasation and nerve injury
- occlusion.

Teaching and learning strategies

Peripheral venous cannulation in children and young people is a practical skill, underpinned by theoretical knowledge. Teaching and learning strategies should focus on developing the competence and confidence of the practitioner in performing the procedure safely, and with minimum distress to the child or young person.

It is recommended that consideration is given to providing practitioners with the opportunity to develop their practical skills initially on older children where appropriate, as they are more likely to remain still during cannulation. This will ensure they learn the dexterity necessary for the skill before being introduced to the clinical holding aspects that are necessary for younger children.

Assessment of prior knowledge, particularly in performing venepuncture, can be useful in developing programmes that reflect the individual needs of the practitioner. A variety of new ways of learning can be used for these programmes, including:

- workbooks
- problem-based learning
- taught provision
- scenarios
- supervised practice
- e-learning
- simulation
- blended learning.

Assessment

Each programme needs to assess competence in practice. Practice assessments should reflect the competences and learning outcomes. There are various assessment methods that are appropriate:

- observation under supervision and demonstration
- reflective practice
- portfolio of evidence showing skills, experience, and development – supported by supervisors
- formal examination, such as Objective Structured Clinical Examination.
Each of these relies on the use of practice assessors. Programme developers should consider who this may be and the criteria needed to achieve and maintain this status. We recommend that an assessor should be experienced in performing peripheral venous cannulation in children and young people. Their ability to assess others should be determined by a formal assessment process. We also advise that they receive clear guidance on their role and responsibilities. Regular updating and assessment of skills can assist in ensuring ongoing competence. We suggest that this takes place at least annually.
2. Competences and learning outcomes

Domain 1: professional and legal issues

Practical competences
- Performs peripheral venous cannulation in accordance with legal, professional and policy requirements.
- Records and reports information in a manner that is clear, concise, timely and accurate.
- Demonstrates best practice when gaining informed consent from children and young people.
- Demonstrates awareness of the limits of own skill, competence and knowledge.

Theoretical competences
At the end of a course of study and period of supervised practice the nurse will be able to:
- discuss the legal and professional issues associated with performing peripheral venous cannulation
- outline current evidence to support best practice in peripheral venous cannulation
- describe the process for obtaining informed consent from the child/young person and their family
- give an account of professional and local policies relevant to performing venous cannulation in children and young people
- describe the legal requirements for good record keeping in relation to peripheral venous cannulation
- reflect on own practice, identifying accountability and competence issues
- describe situations where it is inappropriate to insert a peripheral venous cannula and the alternative action to take.

Domain 2: preparing self, child and family

Practical competences
- Identifies the preparatory processes necessary for safe, effective peripheral venous cannulation.
- Performs appropriate procedures for correctly identifying the patient.
- Uses appropriate methods to select and prepare suitable sites for peripheral venous cannulation.
- Assesses the child’s physical, developmental and psychological needs before, during and after cannulation and uses these to prepare a care plan.
- Selects devices and equipment appropriate for peripheral venous cannulation and gives rationale for choice.
- Considers the use of safety cannulae and equipment where ever possible.
- Communicates effectively with the child and family to help reduce anxiety before, during and after peripheral venous cannulation.
- Uses appropriate strategies for minimising pain associated with peripheral venous cannulation.
- Demonstrates knowledge of pharmacological and nonpharmacological pain relief.
- Applies local anaesthetic cream as prescribed or under local patient group directive, and in a way that maximises its effect.
- Identifies when other health professionals should be involved in preparation or assisting with the procedure.
- Cleans the skin.

Theoretical competences
At the end of a period of study and supervised practice the nurse will be able to:
- describe the anatomy and physiology of veins, arteries and nerves, applicable to peripheral venous cannulation
- give an account of the anatomy and physiology of veins, arteries and nerves and describe the relevance for peripheral venous cannulation
- explain the theory of cannulation in children and young people
- demonstrate good practice when preparing self, child and family for insertion of a peripheral venous cannula
- describe the methods used to identify appropriate and inappropriate sites for peripheral venous cannulation
• assess the physical, developmental and psychological needs before, during and after cannulation and relate these to the care plan
• identify the various devices and equipment used for peripheral venous cannulation and make appropriate choices for differing circumstances
• considers the use of safety cannulae and equipment when possible as they become available for children and are fit for purpose, according to local trust policies/guidelines
• explain the pharmacological and non-pharmacological interventions that can help to minimise a child or young person’s pain and anxiety regarding cannulation
• apply local anaesthetic correctly and in accordance with policies
• describe situations in which other health professionals should be involved in preparation or assisting with the procedure
• give an account of the use of patient group directives.

Domain 3: inserting the cannula

Practical competences
• Demonstrates the safe application of the principles of ‘restraining, holding still and containing children’ (RCN, 2010).
• Applies pressure or a tourniquet appropriately and safely.
• Uses the correct sequence of actions when performing peripheral venous cannulation.
• Demonstrates the correct procedures for minimising infection including hand washing, use of gloves, apron and appropriate technique.
• Demonstrates practical ability and dexterity when inserting a peripheral venous cannula.
• Identifies reasons why cannulation may be unsuccessful and describes actions to address this.
• Uses an appropriate technique and dressing to secure the cannula.
• Communicates with the child and family during the procedure in a manner that minimises anxiety and encourages compliance.
• Demonstrates good practice in immobilising the limb and stabilising the vein during and after the procedure.
• Recognises when cannulation has failed and takes appropriate action.
• Records information concerning the procedure appropriately.

Theoretical competences
At the end of a period of study and supervised practice the nurse will be able to:
• identify reasons why cannulation may be unsuccessful and describe actions to address this
• identify good practice in immobilising the limb and stabilising the vein during and after the procedure
• discuss infection control and health and safety policies and procedures applicable to peripheral venous cannulation
• identify strategies to minimise anxiety and pain when performing peripheral venous cannulation
• describe legal and professional requirements for record-keeping
• describe techniques for encouraging and rewarding the child undergoing peripheral venous cannulation
• understand how to recognise and manage vasovagal reactions.

Domain 4: cannula care and removal

Practical competences
• Prepares a suitable care plan for the ongoing management of a child or young person with a peripheral venous cannula in place.
• Describes and gives a rationale for observations recorded when a peripheral venous cannula is in place.
• Document VIP (visual infusion phlebitis) score at least daily (Gallant and Schultz, 2006)
• Identifies the circumstances when a peripheral venous cannula should be re-sited or removed.
• Removes and disposes of intravenous peripheral cannula safely.
• Acts to minimise pain, bruising and distress when removing a peripheral venous cannula.
• Complies with policies when making records of cannula removal.
• Removes a peripheral venous cannula safely, causing minimal distress to the child or young person.

**Theoretical competences**

At the end of a period of study and supervised practice the nurse will be able to:

• explain the ongoing care required when a peripheral venous cannula is in place.
• communicate a care plan to other team members.
• describe the reasons for removing or re-siting a peripheral venous cannula.
• assess the need for re-siting a cannula.
• know how to remove a peripheral venous cannula safely, causing minimal distress to the child or young person.
• give an account of the information to be recorded when a peripheral venous cannula is removed.

**Domain 5: risks and hazards**

**Practical competences**

• Describes the risks and complications associated with peripheral venous cannulation and acts to prevent or minimise the effects.
• Follows appropriate policies and procedures when disposing of equipment and hazardous substances.
• Takes action to maximise the safety of self, child and others when performing peripheral venous cannulation.

Theoretical competences

At the end of a period of study and supervised practice the nurse will be able to:

• outline the risks and complications associated with peripheral venous cannulation, and the prevention and treatment for these.
• give an account of local policies concerning the prevention and management of extravasation injuries.
• describe the procedures for reporting errors and adverse incidents, including the procedures for managing a needlestick injury.
• give an account of relevant health and safety and infection control policies.
• identify factors that influence the safety of the child, family and self during peripheral venous cannulation.
3. References and further reading


Brenner M, Treacy MP, Drennan J, Fealy G. (2014) *Nurses perceptions of the practice of restricting a child for a clinical procedure*. Qualitative Health Research, 24(8), 1080-1089


Department of Health (2001a) *Reference guide to consent for examination or treatment*, London: DH.


Department of Health (2004c) The NHS Knowledge and Skills Framework (KSF) and development review process, London: DH.


Franklin L (1998) Skin cleansing and infection control in peripheral venepuncture and cannulation, Paediatric Nursing, 10(9), pp.33-34.


Gallant P and Schultz A A (2006) Evaluation of a visual infusion phlebitis score for determining appropriate discontinuation of peripheral catheters. Journal of Infusion Nursing eed an up to date literature review please. including anything about safety devices vol.29 no.6 p 338-45


Health and Safety Executive (2002) Control of substances hazardous to health, London: HSE.


National Association of Hospital Pay Staff (2002) Needle play: guidelines for professional practice (Number 6), Beaconsfield: NAHPS.


National Patient Safety Agency (2004b) Seven steps to patient safety, London: NPSA.


Royal College of Nursing (2005b) Competences: an integrated competence framework for training programmes in the safe administration of chemotherapy to children and young people, London: RCN.

Royal College of Nursing (2005e) Indwelling devices: what you can do to reduce the risk of infection, London: RCN.


Royal College of Nursing (2010), Restrictive physical intervention and therapeutic holding in children and young people: guidance for nursing staff, London: RCN.


Scottish Executive (2005) Building a health service fit for the future, Edinburgh: TSO.
4. Online resources

- Action for Sick Children  
  www.actionforsickchildren.org
- Aseptic Non Touch Technique  
  www.antt.org.uk
- Department for Education  
  www.gov.uk
- Department of Health (England)  
  www.gov.uk/dh
- Department of Health, Social services and Public safety (Northern Ireland)  
  www.dhfpsni.gov.uk
- Evidence-based Practice in Infection Control  
  www.epic.tvu.ac.uk
- Hand hygiene (Scotland)  
  www.washyourhandsofthem.com
- Health and Safety Executive  
  www.hse.gov.uk
- Health Care Standards Unit  
  www.hcsu.org.uk
- Infection Prevention Society  
  www.ips.uk.net
- Joanna Briggs Institute  
  www.jbi.edu.au
- National Association of Hospital Play Staff  
  www.nahps.org.uk
- National Patient Safety Agency  
  www.npsa.nhs.uk
- NHS Education for Scotland  
  www.nes.scot.nhs.uk
- NHS Evidence  
  www.evidence.nhs.uk
- NHS Improvement  
  https://improvement.nhs.uk/
- NHS Litigation Authority  
  www.nhsla.com
- NHS Scotland  
  www.show.nhs.uk
- NHS Wales  
  www.wales.nhs.uk
- Northern Ireland Patient Safety Forum  
  www.hscsafetyforum.com
- Northern Ireland Practice and Education Council for Nurses and Midwives  
  www.nipec.n-i.nhs.uk
- Nursing and Midwifery Council  
  www.nmc-uk.org
- Royal College of Nursing  
  www.rcn.org.uk
- Royal College of Paediatrics and Child Health  
  www.rcpch.ac.uk
- Scottish Patient Safety Programme  
  www.patientsafetyalliance.scot.nhs.uk
- Skills for Health  
  www.skillsforhealth.org.uk
- UK Health and Safety legislation  
  www.coshh-essentials.org.uk
- Health Service Executive Republic of Ireland vascular access and infusion related policies and guidelines  
  www.ivpolicy.com
- Venepuncture and Cannulation, Sarah Phillips  
  itunes.apple.com/gb/book/venepuncturecannulation/id426639682
- VIP score  
  www.vipscore.net/INS2011
The RCN represents nurses and nursing, promotes excellence in practice and shapes health policies

August 2016

Published by the Royal College of Nursing
20 Cavendish Square
London
W1G 0RN

020 7409 3333

RCN Online
www.rcn.org.uk

RCN Direct
www.rcn.org.uk/direct
0345 772 6100

Publication code: 005 699

www.facebook.com/royalcollegeofnursing
www.youtube.com/rcnonline
www.twitter.com/thercn